Mastering Machine Code

Errata Version 1·1

This is errata sheet 1.1, which means the first errata sheet produced applicable to the first edition of the book. Any errata sheets which come after this will be called Version 1.2, Version 1.3, etc. It is hoped that edition two of the book will appear with none of the errors listed herebelow, but that's something beyond my control. The numbers down the left hand edge of the page refer to the number of the page on which the amendment is to be made.

Page	Correction
13—15	
40	in line 6Ø of BASIC program: "=" should read "+".
45	At end of first paragraph: "286672" should read "28672".
45)	2nd line of 1st paragraph: "LD B,(5C8F)" should read "LD BC,(5C8F)".
59)	"IF JB1 HIGH CO TO..." should read "IF JcB 1IGH CO TO...".
67)	8th line of 1st paragraph: "AND A" should read "AND B".
67)	19th line of 1st paragraph: "1 AND 1 is Ø," should read "1 AND 1 is 1, Ø AND 1 is Ø, and".
66)	The binary counter 1'1'1'1'1'1 is missing from the 4th column. It should read between "OR" and "equals".
74)	Last line of 1st paragraph: "semicolons" should read "colons".
91)	Insert an extra BASIC line: 169 INPUT "" (see below).
91)	In definition of CP0 and CPDR: the P/V flag is reset if BC becomes zero, and is set otherwise. The zero flag is set if A was equal to (HL), and is reset otherwise.
106)	The definition of UCF is missing! It means "set the carry flag, leaving everything else unchanged".
125)	5th line of program: "78" ... LD A,C" should read "79 ... LD A,C".
125)	Penultimate line of program: "CALL C_PRINT" should read "CALL C/S_PRINT".
129)	In penultimate line on page: "21" should read "Ø7".
131)	14th line of program "58Ø7" ... JR NC,HL_NEXT" should read "58Ø7 ... JR C,HL_NEXT".
139)	Line 572 of BASIC program: "A4" should read "A4(1)".
142)	8th machine code instruction: "11Ø" should read "11Ø".
149)	Line 93Ø of BASIC program: "52651" should read "65539".
161)	4th line of table: "Ø" should read "Q".
162)	7th line of 2nd paragraph: "KEY SCAN" should read "KEY TEST".
163)	3rd line: "P mode" should read "K mode".
167)	19th line of program "54464120" should read "54464154Ø".
177)	Penultimate line: "caps shift" should read "caps shift space".
196)	3rd line: "caps shift" should read "caps shift space".
221)	1st line of text: "6869" should read "68A6".
221)	2nd line of text: "6869" should read "68A6".
221)	Last line of 2nd paragraph: "6898" should read "68A7".
226)	8th line of program: "A+" should read "=".
261)	19th line of program: "AFT8&+58" should read "AFT8&+61".
273)	16th line of program: "LD A,A" should read "LD B,A".
281)	Opcode "A6C A" is missing from 3rd line of program.
275)	8th line: "6Ø12" should read "6A12".
298)	There is a line of program missing in the RANDOM NUMBERS section. Between "CB2Ø2... CALL STACK A" and "EF ... RST 28" insert the line "7D1Ø ... LD B,1Ø".
299)	At 298. See below.

The following errors occur in the Appendices:

Appendix Two: System variables 5C00 can be accessed using (IY+d) but note that the displacement 'd' here is negative (as in Appendix One Table Two).

Appendix Four: Main table: F flag for instruction Bit b,r; "M" should read "Y". Z and P flags for CPI/CPIR/CPD/CPIR: See error 98.
Last column flags heading: "S Z - H - P N C" should read "S Z - H - P N C".

Appendix Four: Table One: The following entries in the table are wrong. The correct codes for them are listed here:

```
ADC A,(IX+d)       DD8E8dd
ADC A,(IY+d)       FD8E8dd
CP  (IY+d)         FDBE8dd
LD  (IY+d),B       FD7F8dd
RES 5,H            CBAC
RLC (IY+d)         FDCB8dd06
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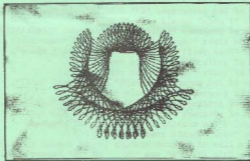
Finally, some notes on errors 91, 298 and 299.

The up and down scrolling (machine code) program is not dedicated to the BASIC part, therefore it uses all twenty four lines of the screen. The BASIC part, though, cannot print on the bottom two lines, and so it is written to take into account the top twenty two lines only. However, the failure to remember this fact when using the machine code "down" routine results in the twenty second line being scrolled down to the twenty third - this is an error since we should really consider it off the screen. To cure the bug an additional line of BASIC is necessary: Line 169 which should read INPUT "". This has the effect of clearing the lower two lines of the screen after the machine code has been called - hence removing the problem.

The machine code RST 28 routines for VAL (code 1D) and VAL$ (code 18) are exactly identical. That is to say "18" and "1D" will both call the same subroutine address in the ROM. In order to distinguish between the two it needs some way of telling the difference, and the way it does this is to check the B register, which is assumed to contain the appropriate code (18 or 1D). In practice if B contains any number in the range 00 to 1C then VAL$ will be evaluated, and if B contains a number in the range 1D to FF then VAL will be executed. Most of the RST 28 routine leave the B register unaltered - in particular 2F (chr$) does not change it. In the random number routines given the instruction LD B,1D should be inserted immediately before RST 28 in order to ensure that VAL is carried out and not VAL$ (the CHR$ instruction in between will not affect things) - if this is not done then report code C: Nonsense in BASIC may be generated since VAL$("RND") does not make sense.

Love & Peace

Tony Baker